Remarks

Claims 1-34 are pending in the present application. Applicants have amended claim 3 and the specification, while traversing the 35 U.S.C. 103(a) rejections. Applicants believe that no new matter has been added by the amendments to the claims, specification, or drawings.

Objection to the Specification

The Examiner objected to the specification because of the title and asked that a new title be presented that is clearly indicative of the invention and suggested; "ALTITUDE AIDING METHOD IN A SATELLITE POSITIONING SYSTEM." Applicants have amended the specification to use the suggested title.

Applicants respectfully submit that the objection to the specification has been addressed.

Claim Objection

The Examiner objected to claim 3 because of informalities. Specifically, the Examiner asked that the claim be ended with a period. Applicants have amended the claim to end with a period as requested by the Examiner.

Applicants respectfully submit that the claim objection has been addressed and that claim 3 is in condition for allowance.

Response to 35 U.S.C. §103 Rejection

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Examiner rejected claims 1, 9, 32 and 33 under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz (US 6,373,432) in view of Hanson (US 2003/0125877). Neither the Rabinowitz patent or the Hanson patent individually or when combined described all of the elements as claimed by Applicants.

The Examiner found that "Rabinowitz did not disclose a location determined from initial digital terrain elevation data, and an altitude equation derived from the initial digital terrain elevation data." Thus, the Rabinowitz patent fails to describe all the claim limitations as claimed by Applicants.

The Examiner stated that the "Hanson (section 0038-0041 patent) teaches a satellite positioning receiver comprising a location determined from initial digital terrain elevation data used to calculate a solution (correction signals, sec 0039) with at least three code phases (note that the code phases are related to signals received from GPS satellites) and an altitude equation derived from the initial digital terrain elevation data", (Page 3, Non-final Office Action).

Sections 0038-0041 of the Hanson patent describe:

[0038] Referring to FIG. 2, the elevation profile 110 for the plot of land can be determined with a Global Positioning System (GPS) 128. A real time base station GPS with a stationary differential GPS (DGPS) 129 is used to collect the elevation information 111. The DGPS 129 includes a receiver 130 with an associated radio transmitter and an antenna 134. The DGPS is placed in a stationary position in the plot of land. The DGPS receiver 130 determines position based upon signals transmitted from the GPS satellite network. The exact longitude, latitude, and altitude of the base station DGPS receiver 130 are entered for reference.

[0039] The GPS 128 also includes a mobile GPS 131. The mobile GPS 131 includes a receiver 136 with an antenna 138. The mobile GPS receiver 136 also obtains positional information from the GPS satellite network. The mobile GPS receiver 136 is coupled to a device, such as a vehicle, that traverse the plot of land. During the collection of elevational information, the mobile GPS 136 calculates position (latitude, longitude, and altitude) relative to the stationary DGPS 129. The accuracy of the positional data is improved by applying correction signals received by the DGPS receiver 130 that can be transmitted to the mobile GPS 136. The data related to these coordinates is collected through a computer processor 138 and stored into memory 140.

[0040] The longitude and latitude coordinates outline a field border 146 of the plot of land being examined. The longitude and latitude are correlated with the elevational information 111 (altitude) which creates the elevation profile 110. Preferably, the GPS 128 determines altitude with a 2-centimeter resolution and latitude and longitude with a 1-centimeter resolution. A GPS 128 able to achieve these resolutions is available from Trimble Navigation Limited located in Sunnyvale, Calif.

[0041] The data related to the coordinates or profile for the plot of land can be used to develop a digitized two or three-dimensional elevation profile 110 of the plot of land. The elevation profile 110 can be displayed on an output device 142 that is coupled to the computer processor 138. Any suitable output device 142 can be used to exhibit the the[sic] computer processor 138. Any suitable output device 142 can be used to exhibit the elevational profile 110, such a display screen or a hardcopy printout from a computer printer.

Thus, a DGPS and GPS receiver are used to determine a position using the GPS system.

The position that is determined is a longitude, latitude, and altitude from the DGPS and another

position at a second GPS receiver that receives a correction signal derived from the DGPS. The correction signal is not an altitude equation as claimed by the Applicants. The position data from the DGPS and GPS are saved to create a digitized two or three-dimensional elevation profile. The location is not described nor taught as being determined from an initial digital terrain elevation data as claimed and described by Applicants. Nor does the Hanson patent teach or describe an altitude equation derived from the initial digital terrain elevation data.

Therefore, the Rabinowitz patent when combined with the Hanson patent fail to teach or describe "a location determined from initial digital terrain elevation data used to calculate a solution with the at least three code phases and an altitude equation derived from the initial digital terrain elevation data" as claimed by the Applicants in claim 1. Similarly, the combination of the Rabinowitz patent and the Hanson patent fail to teach or describe all the elements of claim 32.

Furthermore, there is nothing in the references that support combining the teachings of the Rabinowitz patent with the Hanson patent and if the references where combined, the resulting device and method would fail to function because all of the claimed elements are not taught or described by the combined references.

Applicants submit that independent claims 1 and 32 are in condition for allowance along with dependant claims 2-9 that depend from independent claim 1 and claims 33 and 34 that depend from independent claim 32.

Allowable Subject Matter

Applicants acknowledge that claims 2-8, 10-31, and 34 are in condition for allowance,

with claims 2-8 and 34 being dependent claims that depended from claims that were original

rejected by the Examiner.

Conclusion

In view of the foregoing discussion and amendments, Applicants respectfully submit that

claims 1-34 as presented are in a condition for allowance, which action is earnestly solicited.

Respectfully submitted,
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By

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